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Chapter 2: Process (Domain 2.0)

1. B. Rita is in the process of refining the backlog in order to prepare for the next iteration. Engaging the team allows everyone to be aligned on the stories, relative to one another.

2. C. The project manager is typically responsible for authoring the final report. The project's final report contains a summary of what occurred on the project and may include information on scope, cost, schedule/burn down of work, risk, and quality outcomes.

3. B. Risk strategy, methodology, and risk-related roles and responsibilities are all elements of the risk management plan. Other areas covered by the plan include the following: risk-related funding, timing, risk categories, stakeholder risk appetite, definitions of risk probability and impacts, probability and impact matrix, reporting formats, and tracking.

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4. C. The Agile Manifesto identifies 12 principles that describe the Agile approach. It came about through a group of software developers who came together in 2001 to formalize the Agile approach.

5. C. According to PMI, a good project manager spends up to 90 percent of their time communicating. Communication skills are essential for a successful project manager.

6. A. Change-driven life cycles are also known as Agile or adaptive life cycles.

7. B. Project Communications Management involves every member of the project team, including all the stakeholders. Everyone involved in the project will send or receive project information or both. Project Resources involve all the human and physical resources assigned to the work of the project. Although all the folks working on the project are involved, only the project manager and perhaps a few others are involved in performing the processes within this Knowledge Area.

8. A, C, D. A highly predictive (waterfall) life cycle typically has detailed specifications, while a highly adaptive life cycle (Agile) has requirements that are progressively elaborated. All other statements are true.

9. A-5, B-1, C-4, D-2, E-3. There are a total of 10 Project Management Knowledge Areas. The best indicator of its description is identifying key words that tie it back to the name of the Knowledge Area.

10. A, C. According to the *PMI Code of Ethics and Professional Conduct*, you should always report the truth regarding project status. This question refers to activities associated with the Manage Communications process.

11. B. Using an Agile approach, a project team can assess results and adjust processes to meet new or modified requirements.

12. B. Incremental life cycles focus on speed of delivery as an optimization method. In this type of life cycle, the project yields frequent smaller deliverables to avoid waiting for everything to be completed before a solution exists. In other words, a subset of the overall solution becomes available sooner.

13. B. Since the scenario outlined that the final deliverable of the project was completed, it implies that closing activities would follow. Administrative closure, which occurs as part of the Close Project or Phase process, consists of activities such as ensuring that exit criteria have been met and contractual agreements were properly closed out, measuring stakeholder satisfaction, and ensuring that ongoing operational or sustainment activities are transferred to operations.

14. B. In Scrum, iterations are also known as *sprints*. Iterations or sprints are always time-bound and can be any short period of time defined and agreed upon by the team.

15. D. The milestone list contains the final dates that the project milestones have been accomplished. This is used as an input to the Close Project or Phase process, which is where the final report is produced.

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16. C. Project communications is an input of the Close Project or Phase process as part of project documents. It includes all communications that have been generated throughout the project.

17. B. The project team is performing administrative closure activities associated with the Close Project or Phase process. While information captured will be added to the lessons learned register, administrative closure is a broader choice that captures additional activities noted in the question, such as archiving information and creating the final report.

18. B. According to the *Agile Practice Guide*, all project life cycles share the element of planning. What differs across predictive, iterative, incremental, and Agile life cycles is the degree to which planning is done, and when.

19. B, C. Remember that all questions on the exam will refer to specific terminology used in the *PMBOK® Guide – Sixth Edition*. Although the other options presented may seem correct, the *PMBOK® Guide* calls this process by any of these names: stage gates, phase reviews, phase gates, phase exit, or kill points.

20. C. The Monitoring and Controlling process group is where project performance measurements are taken and analyzed to determine whether the project is progressing according to the plan.

21. D. Agile project management is a methodology that manages projects through iterations of work; it allows the team to quickly adapt to new requirements and allows for continual assessment of goals, deliverables, and functionality of the product, service, or result of the project.

22. D. Within the Agile methodology, a sprint or iteration refers to a short, time-bound period of work, which always starts with a sprint-planning meeting. It is also known as an iteration.

23. D. A project is considered successful when it achieves its objectives and the stakeholder needs and expectations are met.

24. A. Information included within the project charter is high level versus detailed. While the charter may include a list of high-level risks, it is unlikely that a detailed list can be compiled at this early stage of the project.

25. A. The chances for successful completion during the Executing phase are medium to high. Since the project is nearing the end of execution and is currently on track, the likelihood of success is high.

26. A. There are two types of risk acceptance in which no proactive risk response strategy is selected: passive and active acceptance. Passive acceptance means that no action will be taken other than to periodically monitor the risk.

27. C. The project manager is putting together the cost management plan, which is an activity carried out through the Plan Cost Management process. The cost management plan documents the rules of performance measurement, level of precision and accuracy, units of measure, organizational procedures links, control thresholds, reporting formats, process descriptions, and other budget-related details necessary to develop, manage, and control the budget.

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28. B. Appraisal costs are associated with the cost of quality and are the costs expended to examine the product or process and make certain the requirements are being met. Inspection and testing are examples of appraisal costs.

29. B. The best answer is the communications management plan, which is a subsidiary of the project management plan. While project management plan is also a correct answer, the communications management plan is a more specific choice and therefore a better answer. Stakeholder communication requirements, escalation processes, and methods for receiving/obtaining information are all elements addressed within the communications management plan.

30. B, C, D. The product scope description is a component of the project charter and of the project scope statement, but it is not an input to this process.

31. A, B, D. This statement does describe some objectives but *not* adequately. Objectives are quantifiable criteria used to measure project success and should include schedule, cost, and quality metrics. There are no measures of time, cost, or quality mentioned in this statement. Requirements describe the specifications of the objectives and typically wouldn't be mixed into an objective statement. The objective should be clear and concise.

32. C. As part of carrying out the Perform Quantitative Risk Analysis process, updates are made to the risk register. Among the updates are an assessment of overall project risk exposure and detailed probabilistic analysis of the project.

33. B. To determine the total duration of the project, you add up the expected value for each activity. Note, you calculate expected value only for activities that have zero float.

34. A. Philip Crosby is the quality theorist behind the Zero Defects practice, which promotes doing it right the first time.

35. B. Carina is performing the Identify Risks process. The purpose of the process is to identify individual project risks, as well as sources of overall project risk, and document their characteristics.

36. A. Low-priority risks are added to a watch list within the risk register, where they will be monitored for possible changes.

37. A. There are 10 channels of communication, which is taken into consideration when using the communications requirement analysis tool and technique of the Plan Communications Management process. The formula for this is $5(5 - 1) \div 2$.

38. B. The greatest expense for most projects is resources, both human and material and supplies.

39. C. Parametric estimating is a quantitatively based estimating method that multiplies the quantity of work by the rate or uses an algorithm in conjunction with historical data to determine cost, budget, or duration estimates. When the information is reliable, it yields an estimate that is high in accuracy.

40. C. According to the *PMBOK® Guide*, there are two levels of risk: individual project risk and overall project risk. An overall project risk is the effect of uncertainty on the project as a whole, arising from all sources of uncertainty.

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41. B. The funding requirements are derived from the cost baseline. Management reserve is released in increments throughout the project, and the funding requirements are an output of the Determine Budget process.

42. D. Make-or-buy analysis is a tool and technique of the Plan Procurement Management process.

43. D. The Daily Scrum is intended to keep the team functioning on the same page, microcommit to each other, and address any impediments immediately. In her role as Scrum master, Chu attends to support the team and ensure they understand their roles and Scrum processes.

44. D. According to the *PMBOK® Guide*, the purpose of the Plan Stakeholder Engagement process is to develop approaches to involve project stakeholders based on their needs, expectations, interests, and potential impacts on the project. This is the second process of the Project Stakeholder Management Knowledge Area.

45. B. Direct and Manage Project Work, Manage Quality, and Conduct Procurements are 3 of the 10 processes that make up the Executing process group.

46. D. During Closing, a project has the highest probability of completing successfully.

47. D. Since EAC is based on actual costs to date and assuming ETC work will be completed at the budgeted rate, the equation to use for EAC is EAC = AC + (BAC – EV). In this case, your formula looks like this: $425 + ($900 – $475) = $850.

48. B. The project management plan contains the resource management plan, which addresses how resources will be obtained, managed, and released.

49. C. An Agile life cycle consists of a blend of iterative and incremental approaches, which focuses on refining the work to deliver outcomes more frequently. An Agile life cycle has dynamic requirements that focus on customer value.

50. C. Integration occurs when the resources of the project are distributed to other areas in the organization or are assigned to other projects. In this case, the functional manager is reassigning resources to another project.

51. C. Waterfall is a methodology that follows a predictive life cycle. While there are many Agile and Lean frameworks, the *Agile Practice Guide* addresses the following: Scrum, eXtreme Programming, Kanban Method, Crystal Methods, Scrumban, Feature-Driven Development, Dynamic Systems Development Method, and Agile Unified Process.

52. B. Reserve analysis is a technique used as part of the Control Costs and Monitor Risks process. This technique involves the analysis of how much reserves have been consumed to date and whether sufficient reserves remain to address current and future risks.

53. C. Data analysis is a tool and technique of multiple project management processes, including the Control Schedule process, where it encompasses the use of earned value analysis, iteration burndown charts, performance reviews, trend analysis, variance analysis, and what-if scenario analysis.

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54. B. Planned value is the authorized budget assigned to the scheduled work; in other words, it refers to the value of the work to be completed.

55. C. Status review meetings are considered one of the most important types of meetings a project manager holds throughout the project. These types of meetings use interactive communication, where communication occurs between stakeholders and is live.

56. B. When performing activities relating to controlling resources, data analysis may be used to evaluate what alternatives exist to completing activities with resources, such as alternate resources. Data analysis also includes performing cost-benefit analysis, performance reviews, and trend analysis.

57. C. An iteration burndown chart is a data analysis tool and technique of the Control Schedule process. This chart is used to track the remaining work to be completed against the backlog.

58. B. If the critical path tasks have variances, your schedule is at risk. You will use corrective actions at this point (not preventive actions) to get the project back on track, such as adjusting the amount of buffer. Significant delays to noncritical-path tasks can make them become part of the critical path.

59. A. According to the *PMBOK® Guide*, scope creep refers to the uncontrolled expansion of product or project scope without adjustments to time, cost, and resources; in other words, it is scope that has not been approved.

60. A. To determine performance against the budget, you must first calculate variance at completion. To calculate variance at completion, subtract the estimate at completion from the budget at completion (BAC – EAC): $550,000 – $525,000 = $25,000. A positive VAC means that the project is performing under the planned costs.

61. A, B, D. Scope changes might affect the schedule, cost, quality, and other processes and should be thoroughly integrated with all the Monitoring and Controlling processes. Scope changes may reduce the project requirements and thus reduce the number or hours needed to complete the project. This, in turn, could cause a reduction in the project budget.

62. B. Work performance information is a key input that the project manager needs to evaluate performance against the plan (another key input in and of itself). Work performance data, on the other hand, represents raw data that is used in executing the work; it later becomes information as it is analyzed against baselines through other processes that belong to the Monitoring and Controlling process group. The remaining two options are tools and techniques of the process, not inputs.

63. A-1, B-4, C-3, D-2. There are generally three types of delivery methods: predictive, adaptive, and hybrid. Another layer to consider is the project life cycle, of which there are generally four: predictive, iterative, incremental, and Agile.

64. B. In a predictive life cycle, the project's scope, time, and cost are determined during the early phases of the project, meaning that the majority of planning occurs up front. Changes are closely managed following a change control process.

65. B. Status review meetings occur throughout the Monitoring and Controlling phase of the project. The purpose of these meetings is to provide stakeholders with updated information on the progress of the project in a formal manner. Attendees may include a variety of predetermined stakeholders, such as the sponsor, project team members, users, or customers.

66. B. Identify Stakeholders belongs to the Project Stakeholder Management Knowledge Area. The Project Integration Management Knowledge Area contains the following processes: Develop Project Charter, Develop Project Management Plan, Direct and Manage Project Work, Manage Project Knowledge, Monitor and Control Project Work, Perform Integrated Changed Control, and Close Project or Phase.

67. D. Face-to-face meetings are effective, but this statement is not true regarding status review meetings.

68. A. Fixed-price incentive fee contracts are the best option when you need a well-defined set of deliverables for a set price and are including a bonus or incentive for early completion or exceeding expectations.

69. B. Completing a quality audit may lead you to the conclusion that a change request is needed, but you must submit a change request and/or take corrective action to implement the quality improvement.

70. C. Managing quality is sometimes referred to as quality assurance. Manage Quality is a process within the Project Quality Management Knowledge Area. According to the *PMBOK® Guide*, the term *manage quality* is meant to encompass a broader meaning, including representing nonproject work.

71. C. The project manager is using a highly adaptive (Agile) life cycle, where Closing activities involve addressing the highest business value items first versus closing out the project or phase as in a highly predictive life cycle.

72. B. The risk register contains the list of identified risks and all information documented about them, including the risk response plans. As risk triggers occur, they will need to refer to the risk register for information about the risk response plans.

73. A. This process is used only if you are obtaining goods and services outside the organization.

74. C. Quality assurance may be provided by a third party from outside the organization, by an internal QA department, or by the project team. There is no general rule that it is generally provided by outside sources. According to the *PMBOK® Guide*, project managers have the greatest impact on quality during this process.

75. B. Project Scope Management is concerned with product scope and project scope. Product scope is concerned with the characteristics of the product or service of the project and is measured against the project requirements. Project scope is concerned with the work of the project and is measured against the project plan.

76. B. In 2001, several software developers converged to formalize the Agile approach. They published the manifesto for Agile software development and identified 12 principles that are the focus of any Agile approach.

77. B. The *PMBOK® Guide* addresses four project life cycles: predictive, iterative, incremental, and Agile.

78. B. The question describes activities associated with risk management. Kaylee and Alyssa are determining how best to address a positive risk (opportunity) that has been identified.

79. B. In an Agile life cycle, Planning activities involve the progressive elaboration of scope, based on continuous feedback from stakeholders.

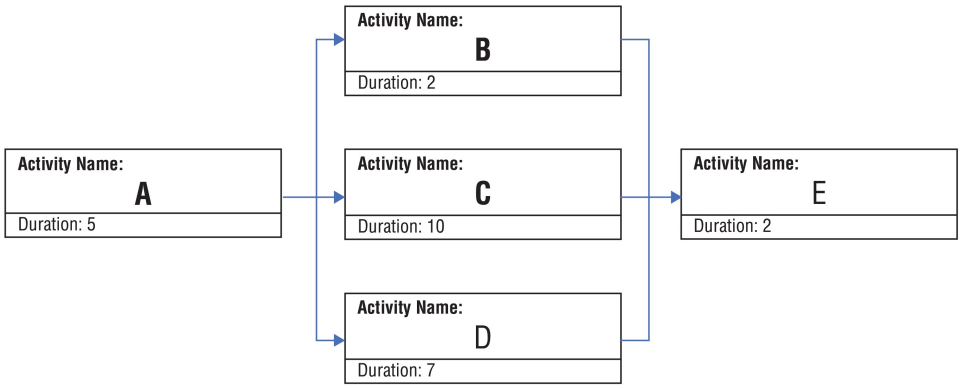
80. C. Fast-tracking refers to compressing or shortening the project schedule. In this scenario, you are attempting to compress the phase.

81. B. The question describes a sprint retrospective meeting, which helps the team plan for the next sprint and determine overall progress.

82. A. Yasmin is using a Waterfall approach, which involves a greater level of up-front planning during the early stages of the project life cycle. In this approach, changes to requirements tend to follow a change control process.

83. B. There are three network paths: A-B-E, A-C-E, and A-D-E. Figure 2.1 shows the network diagram for the information displayed within the table of the question. The duration value is not needed to calculate the answer.

FIGURE 2.1 Network diagram: network path calculation



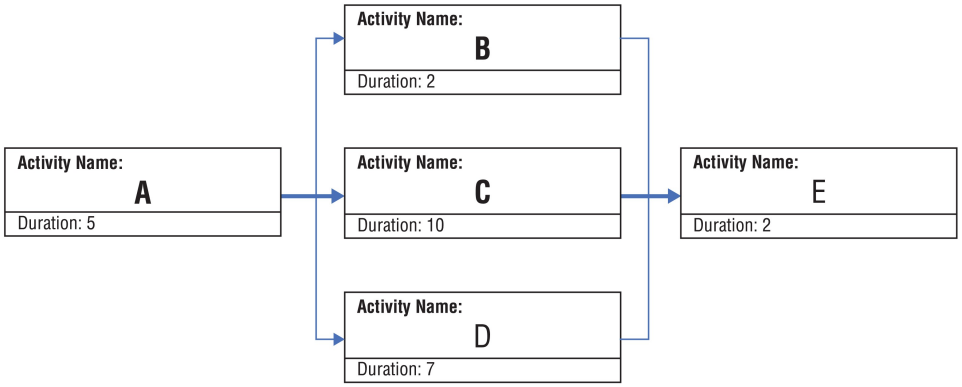
84. B. To calculate the critical path (which is the longest path through the network diagram), add the duration of activities that fall within each network path. The path with the greatest duration is the critical path. Figure 2.2 shows the network diagram, based on the information provided within the table. The duration of each network path is as follows:

A-B-E: 9

A-C-E: 17

A-D-E: 14

FIGURE 2.2 Network diagram: critical path calculation



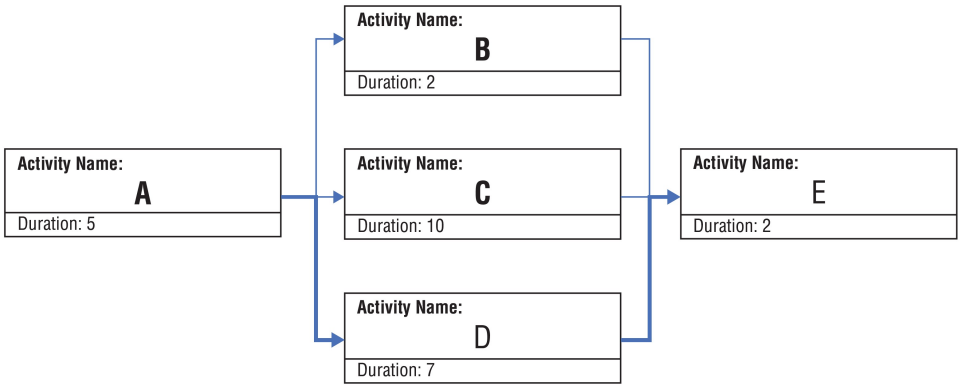
85. C. To calculate the near critical path (which is the second longest path through the network diagram), add the duration of activities that fall within each network path. The path with the second greatest duration is the near critical path. Figure 2.3 shows the network diagram, based on the information provided within the table. The duration of each network path is as follows:

A-B-E: 9

A-C-E: 17

A-D-E: 14

FIGURE 2.3 Network diagram: near critical path calculation



86. D. Purchasing insurance is an example of the transfer risk response. This involves shifting ownership of a threat to a third party to manage the risk and to own the impact if the threat occurs.

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87. C. The project objectives should include quantifiable criteria that can be used to help measure project success. Project objectives should include schedule, cost, and quality measurements.

88. C. The purpose of the Perform Qualitative Risk Analysis process is to prioritize individual project risks for further analysis or action by assessing their probability of occurrence and impact as well as other characteristics.

89. A-4, B-1, C-2, D-3. Philip Crosby is the quality theorist behind the Zero Defects practice, which promotes doing it right the first time; Joseph Juran popularized the Pareto Principle, also referred to as the 80/20 principle; and W. Edwards Deming popularized the Shewhart Cycle, which he evolved into the Plan-Do-Check-Act Cycle. Walter Shewhart is considered to be the grandfather of TQM; he developed statistical tools to examine when a corrective action must be applied to a process.

90. B. Email is a form of push communication, which is one-way and refers to sending information to the intended receivers.

91. D. Functional requirements describe the behaviors of the product, including actions, processes, data, and interactions that the product should execute.

92. B. According to the *PMBOK® Guide*, there are two levels of risk: individual project risk and overall project risk. An individual project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives.

93. B. Three-point estimating is the technique to use when you want to improve your estimates and account for risk and estimation uncertainty.

94. D. To calculate schedule variance, subtract planned value from earned value (CV = EV – AC): $500 – $450 = $50. A positive cost variance means that the project is under budget.

95. D. One of the benefits of Agile approaches is the ability to obtain feedback continuously throughout the project. This allows the team to incorporate the feedback early.

96. D. You should develop a mitigation plan for installation and setup to reduce the probability and/or impact of this risk to the project. Option A is not correct because the sharing response strategy is a strategy for positive risks. This is a negative risk to the project.

97. C. Tracking includes a description of how you'll document the history of the risk activities for the current project and how the risk processes will be audited. This section of the risk management plan is also helpful for lessons learned.

98. A, D. The procurement SOW can be prepared by either the buyer or the seller, but it is progressively elaborated throughout the procurement processes and will likely change prior to the contract award.

99. A. The project team is participating in bottom-up estimating, which will produce activity cost estimates. This activity is associated with the Estimate Costs process. Basis of estimates may also be generated through this session; cost estimates, however, are the primary end outcome of the activity.

100. B. Hybrid life cycles combine elements of different life cycles to achieve a certain goal. A hybrid approach may contain a combination of iterative, predictive, incremental, and/or Agile approaches.

101. A. The sponsor is requesting the earned value of the project. Earned value represents the measure of work performed expressed in terms of the budget authorized for that work; in other words, it is the sum of the planned value of completed work.

102. C. Reserve analysis is a data analysis technique of the Monitor Risks process. Reserve analysis compares the amount of contingency reserve remaining to address the risk that remains. Contingency reserves (used to deal with known risks) are considered part of the project budget, while management reserves (used to deal with unknown risks) are not.

103. B. To calculate EAC when the future work will be accomplished at the planned rate, use the following formula: AC + BAC – EV. Plug in the values provided in the question to arrive at the following: $15,000 + $20,000 – $18,000 = $17,000.

104. C. The elements of communication involve senders, receivers, and messages. The communication model, a tool and technique of the Manage Communications process, includes encoding, decoding, acknowledging, and feedback/response. Verbal and written are forms of communication.

105. D. The scenario notes that two critical activities are already delayed, meaning that an issue has been identified and must be addressed. While updates to the plan are likely, they will be the result of corrective action taken.

106. A. According to the *PMBOK® Guide*, quality assurance is most concerned with using project processes effectively. This includes assuring stakeholders that the end result of the project will meet their needs and expectations.

107. A, C, D. The requisition stage is where the procurement documents are prepared (not the responses to them) and is associated with the Plan Procurement Management process. The two outputs that become inputs are procurement documentation and source selection criteria.

108. D. The project team members, project manager, and the stakeholders are all equally responsible for the quality assurance of the project.

109. C. One of the most important criteria for evaluating sellers is to determine whether they have a clear understanding of what you're asking them to do or perform. Information such as past performance, financial records, and predetermined performance criteria are also important, but only after you are sure they have a clear understanding of what you're asking them to do.

110. A. A sprint retrospective is held at the end of an iteration/sprint to identify what the team learned over the last sprint, including what went well and what did not. The intent is to continue improving the overall process so that the team continues to become more effective as a unit.

111. B. The lessons learned register, created out of the Manage Project Knowledge process, records information about situations that have occurred within the project, including recording challenges, problems, realized risks and opportunities, and other information relevant for future reference. While "project documents" is a technically accurate answer, "lessons learned register" is a more specific answer.

112. D. The Manage Communications process is concerned with ensuring timely and appropriate collection, creation, distribution, storage, retrieval, management, monitoring, and the ultimate disposition of project information.

113. B. The five steps of decomposition are to identify major deliverables, organize the WBS, decompose the WBS components into lower-level components, assign identification codes, and validate the WBS. No mention was made in the question of assigning identification codes or validating the correctness of decomposition, so not all of the steps have been performed. The first three steps of the decomposition process for the Design deliverable have been performed.

114. A. The project scope statement contains the project scope description, project deliverables, acceptance criteria, and project exclusions.

115. B. This question describes an iteration review meeting, which can go by other names such as sprint demo. The intent of the meeting is to review the working product to obtain feedback directly from the product owner and other key stakeholders early so that any course corrections can be made. In iteration-based Agile, this meeting is held at the end of a sprint/iteration, whereas flow-based Agile encourages reviews to occur at least once every two weeks.

116. B. Marysil will need to add a lag between the activities. A lag occurs when time must elapse between two activities, where the delay is added to the successor activity. A lead, on the other hand, speeds up the successor activity.

117. C. The product scope defines the features and characteristics that describe the product, service, or result of the project.

118. B. According to the *PMBOK® Guide*, a definitive range of estimates is –5 percent to +10 percent.

119. D. Carrie used the analogous estimating technique, which is a form of expert judgment. It is a tool and technique of the Estimate Activity Durations process. Analogous estimating bases estimates on previous activities that are similar in fact, and they require the person estimating them to have expertise in the activity. Analogous estimating techniques are typically used to estimate project duration when there is a limited amount of information about the project.

120. C. Schedule compression shortens the project schedule without changing the project scope. Crashing doesn't always give you a good alternative and typically increases project costs. Fast-tracking typically increases risk and necessitates rework.

121. D. The duration of a milestone is zero, marking a significant point in time—typically the start or completion of a major deliverable. Therefore, "Finish GUI" is not a milestone.

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122. A. A fallback plan, also referred to as a contingency plan, is a risk response strategy that is used when the initial response is not fully effective.

123. C. When using price alone as a criterion for selection, there should be more than one vendor who can supply the goods or services you are procuring. However, that doesn't mean you can't use additional criteria for source selection. You should include costs such as delivery and setup in the purchase price criterion.

124. A-1, B-4, C-2, D-3. The definitions provided are taken from *Agile Practice Guide*.

125. C. This question describes the Manage Communications and Manage Stakeholder Engagement processes, respectively. There is no process called Information Distribution.

126. D. Since an issue has not occurred as of yet, the project manager is likely to take preventive actions. Preventive actions are submitted through a change request, which is then evaluated and dispositioned through the project's change control board.

127. A. Claims administration is a tool and technique of the Control Procurements process. Claims administration involves addressing contested changes between the buyer and seller, which then converts into a claim.

128. D. Swarming is a strategy where the team, or several team members, focus collectively on resolving a blocker.

129. B. Weekly status updates are an example of work performance reports, which are produced out of the Monitor and Control Project Work process.

130. B. The Project Integration Management Knowledge Area is the only Knowledge Area that has processes across all five process groups. It contains the high-level processes that bring the results of the remaining Knowledge Areas together, unifying and coordinating all project management activities.

131. D. Julie is looking at a product backlog, which contains a prioritized list of user-centric requirements that she and the team maintain for the smart water bottle product.

132. B. The cost management plan contains the approved approach for determining the budget, managing it, and controlling it. It also captures additional key details, such as the rules of performance measurement, control thresholds, units of measure and levels of precision used, and so on.

133. C. Schedule compression uses fast-tracking or crashing compression techniques to bring delayed activities back in line with the plan. Allocating additional resources to critical activities describes the crashing technique; fast-tracking is where you complete two activities in parallel in order to complete the work faster.

134. C. The project manager is performing the Validate Scope process in this scenario, where a key output is the accepted deliverables. To accept deliverables, the committee would need to confirm that they have been verified through quality control activities. Verified deliverables is an input of the process.

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135. A. Backlog refinement, also referred to as backlog grooming, is where the product owner works with the team to ensure that the stories are prepped and ready for the upcoming iteration. Stories should be clear enough for the team to understand the work, and they should be appropriately sized relative to each other.

136. A. Management reserves are funds set aside for unexpected situations and are used at the discretion of management (hence the name). Management reserves are not considered to be part of the cost baseline but are part of the overall project budget.

137. C. A rough order of magnitude ranges from –25 percent to +75 percent, whereas a definitive range spans –5 percent to +10 percent.

138. B. The recommended size of an Agile team is three to nine team members. It is recommended that Agile teams be colocated and dedicated to the project when possible.

139. A. Statistical sampling involves taking a sample number of parts from the whole population and inspecting them to determine whether they fall within acceptable variances.

140. C. A beta distribution calculation involves giving a greater weight to the most likely estimate. Simply multiply the most likely estimate by four, add the result with the other two estimates, and divide by six: (4 × (ML) $72 + (O) $55 + (P) $85) ÷ 6 = $71.3.

141. A-5, B-1, C-4, D-2, E-3. There are many variations of Agile approaches, including hybrid/combination approaches (i.e., ScrumBan). Descriptions provided are derived from the *Agile Practice Guide*, which offers several descriptions and examples of a wide range of Agile approaches.

142. A-3, B-2, C-1, D-4. Predictive and iterative life cycles tend to have low frequencies of delivery, whereas incremental and agile have a high frequency of finished deliverables; both predictive and incremental experience few changes, while iterative and Agile experience very frequent changes based on customer feedback.

143. A. The purpose of the daily stand-up meetings, one of three key meetings used within Scrum, is not planning. Instead, daily stand-up meetings are used to uncover any obstacles to committed work and as a way to ensure that work is progressing smoothly.

144. C, D. The Scrum team held a sprint retrospective. In Scrum, this meeting is held at the end of every sprint and allows the team to identify what went well in the process during the recent sprint and what could have gone better, and they commit to improving at least one thing in the upcoming sprint. They are a combination of lessons learned and process improvement.

145. D. Velocity refers to the total story points that the team is completing on average per iteration. Velocity allows the team to forecast the rate at which they are burning down the work of the project. A velocity chart shows the sum of the estimates of work delivered across all iterations.

146. A. The Plan-Do-Check-Act cycle was developed by Shewhart and later refined by Deming. It reflects the iterative, results-oriented, and interactive nature of the project process groups.

147. A. There are three series of project life cycles within the basic framework for managing projects: sequential, iterative, and overlapping. In a sequential life cycle, one phase must finish before the next phase can begin.

148. B. Phase endings are characterized by the completion, review, and approval of a deliverable.

149. A. The *PMBOK® Guide* describes 49 project management processes that can be grouped in five process groups, which are as follows: Initiating, Planning, Executing, Monitoring and Controlling, and Closing.

150. C. Agile project management is a method of managing projects in small, incremental portions of work that can be easily assigned, easily managed, and completed within a short period of time.